

## ABSTRACT OF THE DISCLOSURE

A monitoring system is presented. The monitoring system may include a first chemical vessel containing a first chemical mixture and a second chemical vessel containing a second chemical mixture. The monitoring system may further include a sensor configured to selectively receive a first sample flow of the first chemical mixture from the first chemical vessel and a second sample flow of the second chemical mixture from the second chemical vessel. The sensor may be configured to measure a first sample attribute value of the first sample flow and a second sample attribute value of the second sample flow. By multiplexing multiple sample flows through a sensor, the monitoring system may monitor attributes of multiple chemical mixtures without requiring separate sensors for each chemical mixture monitored by the system.

In an embodiment, the monitoring system is preferably configured to control an attribute of a chemical mixture. In such a case, the monitoring system may further include a control system configured to receive the first sample attribute value and the second sample attribute value from the sensor. The control system is further preferably configured to input the first sample attribute value into a first attribute control algorithm to calculate a first attribute control output. The first chemical mixture includes a first bulk attribute value, and the control system is preferably configured to direct the adjusting of the first bulk attribute value.